

chamber profiles are used for load paths of impinging forces and moments. The individual bars of the bar work construction join to form structural frame gussets where they are welded together. This results in a torsionally rigid frame structure. More heavily loaded areas which cannot be optimally supported using the bar-element construction technique, in particular areas around hinges and the lock, are specifically reinforced. By contrast, the large areas of the lightweight door where forces and moments impinge only to a small extent, can be made with thin walls as pressed parts or deep drawn parts made from light metal sheet, in particular from aluminium sheet. This results in considerably reduced weight of the lightweight door, without there being a negative effect on rigidity.

Paragraph beginning at line 19 of page 4 has been amended as follows:

Further preferred embodiments and improvements of the basic teaching of the invention are provided as set forth herein.

Before the paragraph beginning at line 23 of page 4, insert the following:

BRIEF DESCRIPTION OF THE DRAWINGS

Before the paragraph beginning at line 11 of page 5, insert the following:

DETAILED DESCRIPTION

Paragraph beginning at line 11 of page 6 has been amended as follows:

Furthermore, a profile window frame 8 made in one piece from light metal/light metal alloys, in particular from aluminium/aluminium alloys, forms part of the lightweight door according to the invention. At its ends, said profile window frame 8 is permanently connected, in particular welded, in any case to the inner window gutter profile 5. Also part of the lightweight door is an outer skin 9 of the door, said outer skin 9 being made in one piece and being permanently connected to the supporting frame 1 and the outer window gutter profile 6, in the present case in particular by flanging. Preferably, the window frame 8 is an extruded profile, bent by stretching and rolling. Its particular design is

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the subject of a parallel patent application, namely commonly owned co-pending U.S. Patent Application Serial No. _____, Attorney Docket 4680-00002, filed on even date herewith, incorporated herein by reference and whose content by reference also forms part of the present disclosure.

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Paragraph beginning at line 11 of page 12 has been amended as follows:

Overall, rigidity of the lightweight door is significantly increased in that the window frame 8 is rigidly connected, in a highly effective way, to the supporting frame 1. To this effect, the embodiment shown, which is the preferred embodiment, provides for the ends of the window frame 8 to extend beyond the front and rear end of the inner window gutter profile 5, where they are welded to the window gutter profile 5. As a result, the window frame 8 reaches comparatively far down into the door gutter region. This provides an adequate lever arm to effectively deflect bending moments impinging from the outside, into the door frame 1. At the lock reinforcement 11b, the embodiment shown (Fig. 6) comprises an additional frame shoulder 19 which is welded to the end of the window frame 8 which end is located in this location. Fig. 6 shows that the window frame 8 extends quite deeply into the door gutter region. The position of this section is shown in Fig. 2. In this way, the point of application of the forces is brought close to the lock position.

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In the Claims:

Before the first claim insert:

What is claimed is:

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Claim 1 has been amended as follows:

1. (amended) A lightweight door for motor vehicles

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comprising an essentially U-shaped supporting frame (1) made from light metal or a light metal alloy, wherein said supporting frame (1) comprises: a hinge support (2) forming one U-limb, a lock support (3) forming the other U-limb and a door bottom (4) forming the U-stay, with an inner and an outer window gutter profile (5, 6) which is made from light metal or a light metal alloy, said window gutter profile (5, 6)